

What Makes a DARPA PM



- **Idea Generator**
- **Technical Expert**
- **Entrepreneur**
- **Passion for Drive Leading Edge Technology**
- **National Service**

DARPA Hires Program Manager for their Program

... if you have interest, formulate your program ideas along the lines of the following charts and contact the Office Director at:
john.zolper@darpa.mil

Program Name

Name

Contact info

Resume (1 chart)

- **Who are you?**
- **What is your technical background?**
- **What key work have you done in the field?**
- **Recognition within the technical community**
- **Key awards**

The Idea (1 chart)

- **What are you trying to accomplish?**
- **A diagram of what you plan on doing.**
- **Develop a performance trade space (e.g. power versus speed; MOPS/cm² versus watts) and show current SOA and where your program will take it**

Technical Approach

- **How do you plan to accomplish the new capability**
- **What new results suggest this is possible**
- **Analysis of required performance**

Technical Challenges

- **Breakdown the end product into key technical challenges that need to be overcome**
- **Quantify current performance and the final performance required to meet the complete program goals**
- **Include visuals or graphics where possible**

Impact

- **If this is successful, what difference will it make**
- **How will this new technology impact system performance (quantify this)**
- **Who in the DoD will care?**
- **Are there commercial applications?**

Program Plan and Metrics

- **Estimate how long it will take**
- **Break the overall program into phases with key performance metrics at the end of each phase**

A good program plan should answer the questions below

Heilmier's Catechism

PRIMARY

- What are you trying to accomplish?
- How is it done now, and with what limitations?
- What is truly new in your approach which will remove current limitations and improve performance? How much will performance improve?
- If successful, what difference will it make?
- What are the mid-term, final exams or full scale applications required to prove your hypothesis? When will they be done?

SECONDARY

- How could this transition to the end user? (usually DoD)
- How much will it cost?

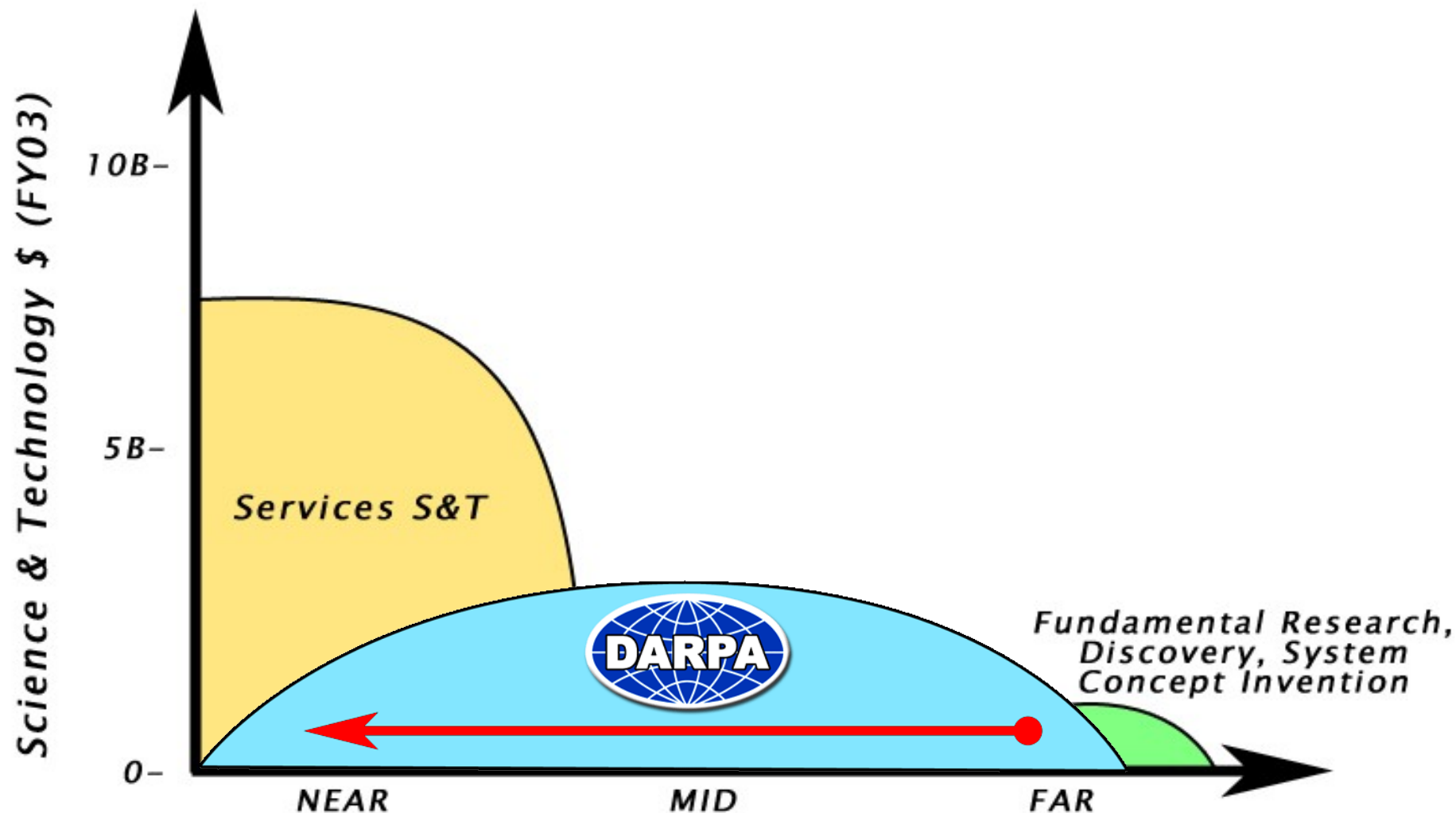
Microsystems Technology Office Overview: Background Info for PM Candidates



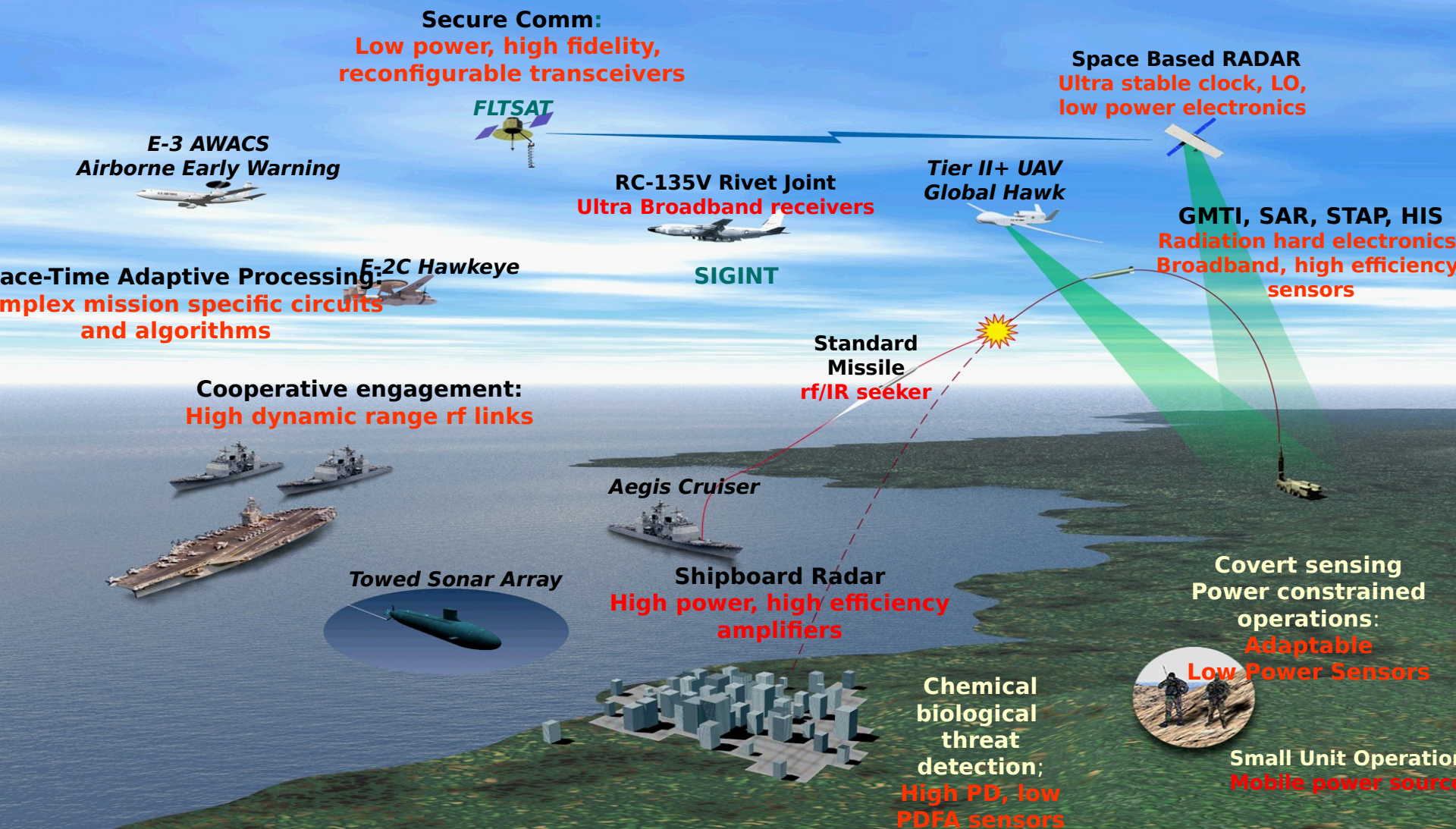
Dr. John C. Zolper, Director
Dr. Dean R. Collins, Deputy Director

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DARPA's Role in Science and Technology

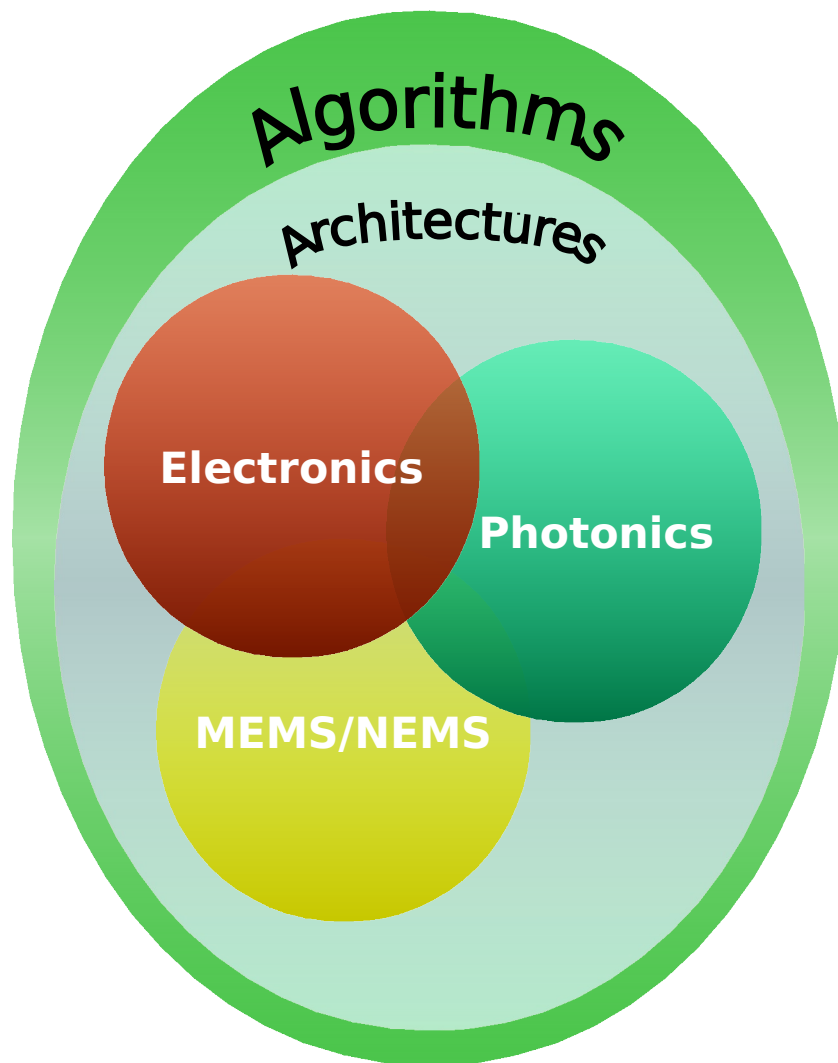


Microsystems Components Driving Platform Innovation



Exploit breakthroughs in materials, devices, circuits, and mathematics to develop beyond leading edge components with revolutionary performance and functionality to enable new platform capability for the Department of Defense.

Five Frontiers of Integrated Microsystem

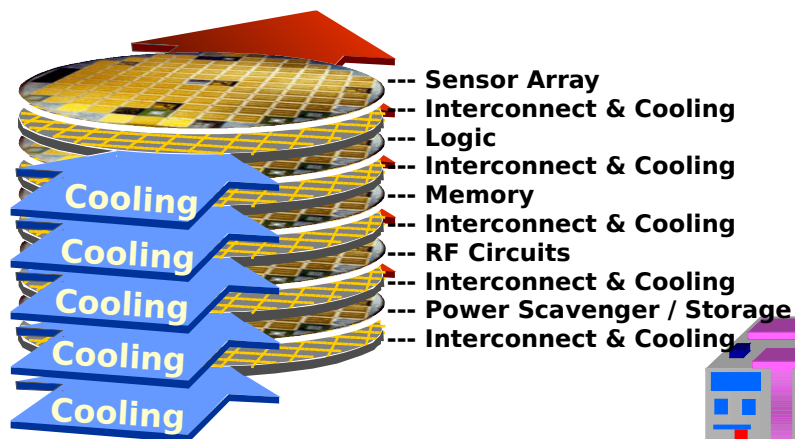


Classes of Microsystems

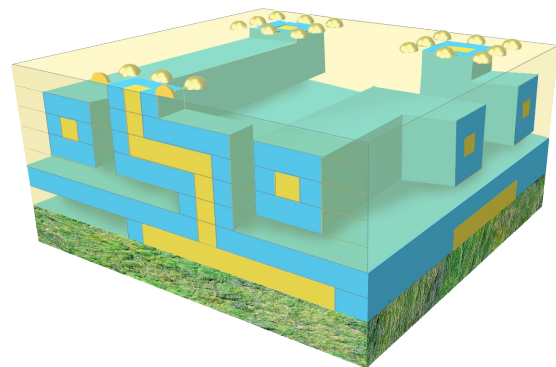
Increasing Capability

- **Intelligent:** High level of autonomy with the ability to reason and learn with time
- **Adaptable:** Some degree of autonomy to self optimize, test, or monitor. Able to change mode of operation.
- **Reconfigurable:** Predefined, deterministic set of operating parameters that can be selected externally.
- **Static:** Fabricated to design specifications with fixed performance.

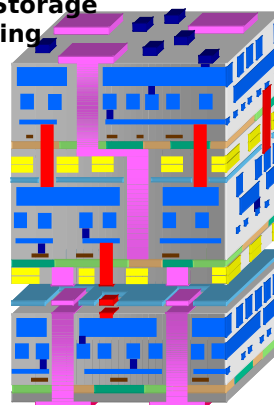
Exploiting the 3rd Dimension



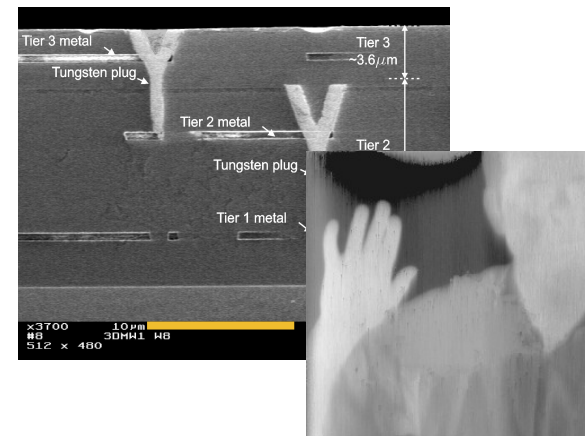
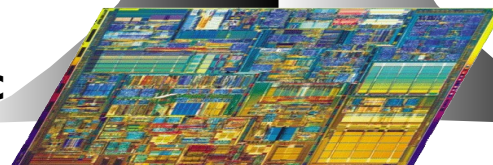
3D Electronics



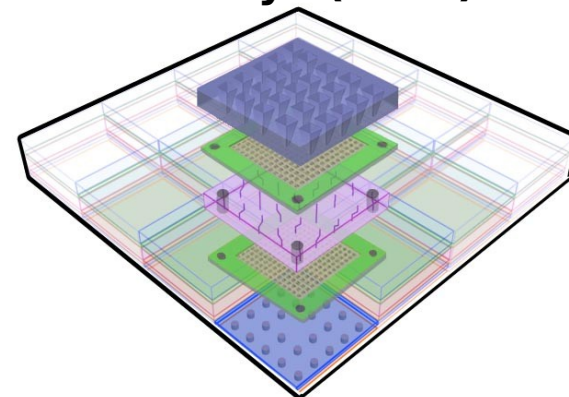
3D Micro-Electromagnetic RF Systems (3D-MERFS)



Interconnects Architecture



Vertically Interconnected Sensor Arrays (VISA)



Scalable Microsystems for Affordable Reconfigurable Transceivers (SMART)



Review the Current MTO Programs at:



<http://www.darpa.mil/mto/radprograms.html>



*Integrated Microsystems
driving platform capability
for the warfighter*